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Stenaptinus (Coleoptera: Carabidae: Brachininae) of Vietnam. Note 1

Stenaptinus (Coleoptera: Carabidae: Brachininae) Вьетнама. Сообщение 1

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KEY WORDS: Coleoptera, Carabidae, Brachininae, *Stenaptinus*, new species, Vietnam, Oriental region.
КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Carabidae, *Stenaptinus*, новый вид, Вьетнам, Ориентальная область.

ABSTRACT. Nine apterous concolorous species of the genus *Stenaptinus* Maindron, 1906 from Vietnam are arranged into two species groups, the *bidoupensis*-group and the *dissolutus*-group, and reviewed, with two new species, *S. montanus* **sp.n.** and *S. glabricollis* **sp.n.**, described and some others re-described. *Stenaptinus dissolutus* (Andrewes, 1923), **stat.rest.**, revalidated and *S. kalyakini* (Fedorenko, 2013), **stat.n.** downgraded to its subspecies. Key to the species and four species groups of the genus is provided and soome new data on comparative morphology of terminal abdominal urites and reproductive tract of female are briefly discussed. *Stenaptinus* and *Pheropsophus* Solier, 1833 are considered as separate genera.

РЕЗЮМЕ. Дан обзор 9 бескрылых одноцветных видов рода *Stenaptinus* Maindron, 1906 из Вьетнама с описаниями 2 новых видов, *S. montanus* **sp.n.** и *S. glabricollis* **sp.n.**, и переописанием некоторых других. Виды объединены в 2 видовые группы — '*bidoupensis*' и '*dissolutus*'. *Stenaptinus dissolutus* (Andrewes, 1923), **stat.rest.**, ревалидизирован, а *S. kalyakini* (Fedorenko, 2013), **stat.n.**, понижен в ранге до его подвида. Составлена определительная таблица видов и 4 видовых групп. Кратко обсуждаются новые данные о сравнительной морфологии терминальных сегментов брюшка и репродуктивного тракта самки. *Stenaptinus* и *Pheropsophus* Solier, 1833 рассматриваются в качестве самостоятельных родов.

Introduction

Stenaptinus Maindron, 1906 (Brachinini, Brachininae, Carabidae) is a polytypic genus of bombardier beetles, which mostly includes species with variegated body of medium size. Many of them are very common throughout the Paleotropical realm east to Australia and inhabit various, mostly open biotopes, natural as well as anthropogenic, in lowlands and piedmonts. Some other species are apterous concolourous forest-dwellers occurring at higher altitudes in mountains.

Jeannel [1949] recognized *Stenaptinus* (as *Pheropsophus* sensu Jeannel, 1949 et auct.) and *Pheropsophidius* Hubenthal, 1911 as separate genera populating the Old World or the New World, respectively. Erwin [1970, 1971] treated the two taxa in a similar way and established synonymy *Pheropsophus* Solier, 1833 = *Pheropsophidius* Hubenthal, 1911. As a result, the Old World species proved to be transferred to the genus *Stenaptinus* and shared among its three subgenera, with great majority of the species being placed in the subgenus *Parapheropsophus* Hubenthal, 1911. The subsequent authors either share Erwin's point of view [Reichardt, 1977; Erwin, Sims, 1984; Frank et al., 2009] or consider *Stenaptinus* (= *Parapheropsophus*) as a subgenus of *Pheropsophus* only [Lorenz, 1998, 2005; Hrdlička, 2003, 2017a,b]. Whatever its rank, *Stenaptinus* includes over 150 species ranging combined all over the Paleotropical realm as far north as the southern Palearctic and as far southeast as Australia. About 40 species, including 20 Oriental ones, have been described recently [Giachino, 2003, 2005; Kirschenhofer, 2010; Baehr, 2012; Fedorenko, 2013; Hrdlička, 2015a, b; 2017a, 2019; Lassalle, Schnell, 2019; Venugopal, Thomas, 2019].

The Oriental species are insufficiently studied, and many faunal records [Park et al., 2006; Kirschenhofer, 2010; Fedorenko, 2013; Hrdlička, 2019] are based on very limited material. Besides, many species of the genus are much described based chiefly on colour patterns of the head, of the pronotum and of the elytra, taken separately each or combined. These patterns vary greatly between individuals as well as between populations of a species in shape, and a particular colour pattern is not seldom observed in different species. This suggests that some 'species' may be colour morphs rather than valid species while some others, e.g., *S. javanus* (Dejean, 1825), each may represent a group of more than one species.

In this paper we review *Aptinus*-like species of *Stenaptinus* from Vietnam (the *aptinoides*-group sensu Fedorenko, 2013), with descriptions of two new species and re-descrip-

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tions of some others, based on fresh material. The major part of material was collected during expeditions to some regions of Vietnam, sponsored by the Russia-Vietnam Tropical Center, Hanoi, Vietnam.

Acronyms used are as follows: MPSU — the Moscow Pedagogical State University; SIEE — the author's reference collection at A.N. Severtsov Institute of Ecology & Evolution, Russian Academy of Sciences, Moscow; ZISP — Zoological Institute, Russian Academy of Sciences, St. Petersburg; ZMMU — Zoological Museum of the Moscow State University.

The following parameters and ratios (Tabs 1–2) were analyzed: lengths of antennomeres 1 to 4 (A**n**L, **n**=1, 2, 3, 4), used in the antennal ratio AR = A1L/A3L : A2L/A3L : A4L/A3L; maximum body length measured between apices of closed mandibles and sutural angle of elytra (BL); length of elytron, measured from the highest point of basal margin to sutural angle (EL); maximum width of elytra (EW); width of head across eyes (HW); length of eye in sagittal plane (OL); width of pronotum between apical (PA) or basal (PB) angles; length of pronotum along median line (PL); distance between pronotal apex and level of maximum width of pronotum, measured along mid-line (PLw); maximum width of pronotum (PW). The measurements were taken using an eyepiece micrometer, to two decimal places. The means are given in round brackets for the ratios. All labels are printed in square brackets unless otherwise specified. Data on labels of type specimens are in quotes.

Male aedeagi were examined dried or with internal sac everted and maximally inflated with air and then air-dried; female genitalia were examined either dried or placed in glycerin, after being boiled for two minutes or put for a day in a diluted KOH solution and then rinsed.

Elytral interval means a depressed area between adjacent longitudinal ridges.

Results

Following Jeannel [1949] and Erwin [1970, 1971] we treat *Pheropsophus* and *Stenaptinus* as separate genera, with distinctive features arranged in the key below for convenience:

1(2) Elytral epipleura minutely tuberculate and densely pilose. Propleural groove (that between 'proepisternum' and 'proepimeron') missing or incomplete, obliterate medially and laterally. Elytral ridges not or barely separated from depressions in between, or in form of convex intervals as usual in Carabidae; nearly confluent apically in some species. Protibia slightly lobate at latero-apical angle. Legs barely sexually dimorphic: profemora not laterally tumid and protarsomeres 1–3 not or barely dilated, with no or sparse lateral setae, in male; anterolateral ridge of mesotibia with spiniform setae arranged in a row in both sexes. Female gonocoxite IX short and wide; spermatheca Y-shaped, annulated, with horns filiform, of which one is long and the other very long; sternite VIII with apical setae multiple, dense, short and strong, not differentiated from dense and short pilosity around; tergite VIII without lateral sclerotization inside spiracle (Figs 14, 28, 44). Aedeagus with apex of median lobe small and dorsally bulbous; internal sac strongly asymmetric. Pronotum mostly deeply constricted in front of acute basal angles. Head and usually also pronotum pale. — Neotropical realm .... *Pheropsophus* Solier, 1833

2(1) Elytral epipleura smooth and glabrous. Propleural groove conspicuous throughout. Elytral ridges wide, subcostate and rather abruptly separated from depressions, to sharply carinate; subequally spaced and abruptly terminating at apical truncation. Protibia non-lobate. Legs distinctly sexually dimorphic: profemora laterally tumid and protarsomeres 1–3 conspicuously dilated, with dense lateral setae, in male; anterolateral ridge of mesotibia with spiniform setae arranged in one row in female, but in 2–3 irregullar rows medially in male. Female gonocoxite IX mostly moderately to very long (except in *Aptinomorphus*); spermathecal receptacle short Y-shaped, without annulations, with horns short to indistinct; sternite VIII with apical setae differentiated from pilosity around; tergite VIII with a more or less distinct lateral sclerotization inside spiracle (Figs1–13, 15–27, 29–43). Aedeagus with apex of median lobe large, triangular in dorsal view; internal sac symmetric or asymmetric due only to an unpaired distal basal bulb present. Pronotum with a slight prebasal constriction and nearly right basal angles. Head and pronotum with colour pattern variable. — Paleotropical realm, Australian region, Southern Palearctic .... *Stenaptinus* Maindron, 1906

Stenaptinus Maindron, 1906

Maindron, 1906: 15; Erwin, 1970: 34; 1971: 281. — *Pheropsophus* (part.): Solier, 1833: 461; 1834: 655–658, pl.16, fig.4; Chaudoir, 1876: 16; Arrow, 1901: 193; Hubenthal, 1911: 547; 1914: 437; Andrewes, 1930: 270; Csiki, 1932–1933: 1595–1604; Jeannel, 1949: 1084; Lorenz, 1998: 14; 2005: 14; Hrdlička, 2003: 217; 2017b: 479.

— subg. *Parapheropsophus* Hubenthal, 1914 (type species: *Brachinus verticalis* Dejean, 1825); Jeannel, 1949: 1084; Erwin, 1970: 34; 1971: 281.

— subg. *Aptinomorphus* Jeannel, 1949: 1084 (type species: *Pheropsophus acutecostatus* Fairmaire, 1892); Erwin, 1970: 36; 1971: 281.

Type species: *Pheropsophus krichna* Maindron, 1906, designated by Jeannel, 1949.

REDESCRIPTION. Unnecessary here, except for notes on comparative morphology of terminal abdominal urites and reproductive tract in female.

Sternite VIII (Figs 1–13, 15): divided into two hemisternites by fairly narrow membranous area and more or less (the *tripustulatus*-group) widely membranous mediobasally and medioapically, with a subquadrate basolateral apophysis and 1–2 internal (dorsal) carinae on each side, inner carina being oblique and outer carina longitudinal. The species of the *javanus*-group have either both carinae subequally developed or one of them much reduced, and the only carina traceable is a supposedly derived condition characteristic of the other groups. The inner carina has been retained in the *dissolutus*-group and outer carina in *Aptinomorphus*, the *tripustulatus*-group and the *bidoupensis*-group. The inner carina (or the only carina traceable) runs either near (the *dissolutus*-group, the *javanus*-group) or at a considerable distance from the corner (*Aptinomorphus*, the *tripustulatus*-group, the *bidoupensis*-group), ranging between middle and outer margin of the basolateral apophysis.

Pilosity dense except in the *bidoupensis*-group. Apical setae, especially median ones, very slightly differentiated from ventral pilosity in *Aptinomorphus* only, otherwise strong, straight or curved inward (dorsad); arranged in row of about five (the *tripustulatus*-group), or 6–8 (*Aptinomorphus*, the *bidoupensis*-group), or multiple (the *dissolutus*-group, the *javanus*-group) setae. The *tripustulatus*-group is also very distinctive in having medio-apical sclerite projecting apicad.

Tergite VIII (Figs 16–27, 29–30) with three sclerotized (pigmented) regions on each side, termed anterior sclerotization (*as*), posterior sclerotization (*ps*), and smaller lateral sclerotiza-

tion (*ls*), with *ps* being either median (*psm*) or apical (*psa*) in position. These regions are more or less separated by depigmented, transparent, zones and followed by apical depigmented region (*adr*). All the taxa have *as* similar in shape, except that the *tripustulatus*-group is very distinctive in having *as* very large, strongly sclerotized, not or barely separated from vague *psa*, combined with *ls* indistinct and *adr* very short, with dense spiniform setae. The latter three characters (*psa*, *ls*, *adr*) drive this group closer to the *bidoupensis*-group, of which members well-defined triangular *psa* and sparsely setulose *adr* are characteristic. *Aptinomorphus* is similar to either and shares large *as* with species of the *tripustulatus*-group. The *dissolutus*-group and the *javanus*-group are much more similar to each other than to the remaining groups in all integral parts, primarily *adr* long, a third as long as the tergite, tuberculate and setulose, and also by *as* triangular and *psm* subrectangular, narrow and transverse. Interspecific differences within the *bidoupensis*-group and the *dissolutus*-group are slight and more material is required to clarify significance of these differences and geographical variability of the integral parts.

Urite IX (Figs 31–43, 45): similar in the taxa examined, except that gonocoxites are very short in *Aptinomorphus* or very long and sparsely setulose along dorsal edges in the *tripustulatus*-group; this latter pattern, combined with ventral membrane grooved to receive gonocoxites and a slender longitudinal sclerotization between these grooves, makes the *tripustulatus*-group very peculiar within the genus.

Reproductive tract (Figs 47–48, 50–53): *bursa copulatrix* either membranous or with two lateral sclerites (Fig. 45), its narrow proximal portion telescoped into large distal portion. Spermathecal receptacle short Y-shaped, more or less asymmetric owing to one horn somewhat shortened or absorbed by the incrassate body (secondarily bulbous in some species), about as long as seminal canal, which enters *bursa copulatrix* ventro-apically.

GEOGRAPHIC DISTRIBUTION. Throughout Paleotropical realm north to the southernmost Palearctic and east to Australia.

COMMENTS. From the above comparison one could conclude or suggest that (1) the *tripustulatus*-group is peculiar and may be close to the *bidoupensis*-group; (2) the *dissolutus*-group and the *javanus*-group are close to each other than to any other group; (3) *Aptinomorphus* seems to be more primitive than the other taxa compared, being supposedly closer to the first couple.

The *javanus*-group and the *dissolutus*-group with certainty, and the *bidoupensis*-group probably, belong to the nominotypical subgenus, whereas the *tripustulatus*-group is most likely to be conformable to the subgenus *Parapheropsophus*. However, we do not use this latter name here because the type species of the subgenus has not been dissected.

While *Pheropsophus krichna* Maindron, 1906 is the type species of the genus, in describing *Stenaptinus* Maindron [1906] mentioned that *Ph. melancholicus* (Schmidt-Göbel, 1846) can be considered as type of this section of aptiniform *Pheropsophus*, which phrase meant predication rather than surmise. The combination '*Pheropsophus melancholicus*' was first introduced by Chaudoir [1876] for a species of *Pheropsophus* he misidentified, therefore *S. melancholicus*: (Maindron, 1906) = *S. melancholicus*: (Chaudoir, 1876) = *S. scythropus* (Andrewes, 1923), non *Brachinus melancholicus* (Schmidt-Göbel, 1846).

According to the description, the subgenus *Aptinomorphus* includes two aptiniform Madagascan species defined by the elytra having no apical setulose fringe, nor humeri following apterous condition of the adult, and also by a longer pronotum and the body dorsum without variegated pattern. Erwin [1970] used also sharply carinate elytral ridges (*vs*. wide and costate) to differentiate *Aptinomorphus* from *Stenaptinus* sensu Erwin, 1970 (= *Stenaptinus* sensu Maindron, 1906). All these differences, however, do not serve their purpose because two examined females *S. bipartitus* (Fairmaire, 1868) have been found to have while all examined species of *Stenaptinus* sensu Erwin, 1970 have no apical elytral fringe, and the elytral ridges are very narrow in most species of the latter taxon. Rather distinctive female genitalia of *Aptinomorphus* may be used at the moment for the purpose instead: very short and broad gonocoxite IX [Erwin, 1970], *bursa copulatrix* with lateral sclerites in its distal part (*vs*. membranous), tergite VIII sclerotized in a different manner, and sternite VIII with apical setae only slightly differentiated from the pilosity around (Fig. 13).

The species reviewed below are arranged into two separate species groups, the *bidoupensis*-group and the *dissolutus*-group, which include more than a dozen Oriental species combined. These are confined to northern Indochina west to northeastern India and Bhutan, while reaching southern China. The eastern species are very similar in appearance, and some of them are sympatric and often live syntopically. At the moment, I consider two western species, *S. aptinoides* (Chaudoir, 1876) and *S. prophylax* (Heller, 1903) as *incertae sedis*. These, as well as the species from the Sunda Islands are beyond the scope of this paper and thence not included in the key below. This is true also of two little-known species from Myanmar, *S. cardoni* (Maindron, 1898) and *S. heathi* (Arrow, 1901).

KEY TO SPECIES GROUPS OF *STENAPTINUS* AND SPECIES OF THE *BIDOUPENSIS*-GROUP AND THE *DISSOLUTUS*-GROUP OF VIETNAM:

1(20) Apterous species. Pronotum and elytra uniform brown to black. Elytra without humeri and thence much wider apically than basally, with common apical truncation in form of obtuse re-entrant angle, apical edge glabrous, ridges narrow, sharply carinate to very weak. Dorsum often distinctly pilose. Prosternum entirely pilose.

2(9) Elytral ridges 7 and 8 (counting sutural one) conspicuous, sharply carinate toward bases, ridge 6 entire. Propleura glabrous. Body dorsum mostly slightly paler, brown to dark brown, and largely glabrous. Head bicoloured, pale in front of mid-eye level. In female, tergite VII and sternite VIII with a row of strong and straight apical setae, 6–8 ones on each side of the latter (Figs 6, 9, 12, 46). Internal sac of aedeagus simple and symmetric, without distal basal bulb (Figs 62–63) .... The ***bidoupensis*-group**.

3(4) Head with neck smooth to indistinctly rugulose. Female gonocoxites IX long, with apex slightly triangular and blunt .... *S. bidoupensis* Fedorenko, 2013

4(3) Neck coarsely rugose. Female gonocoxites IX short and apically rounded.

5(6) Pronotum barely shorter (PW/PL~1.02), broadest about a fourth from apex (PLw/PL~0.26), with sides parallel in front of nearly right basal angles, and thence distinctly wider at the widest point than at base, apex barely wider than base (PB/PA~0.96); EL/EW~1.28 *S. ngoclinhensis* (Fedorenko, 2013)

6(5) Pronotum barely longer (PW/PL~0.93/0.99), broadest a little less than a third from apex (PLw/PL~0.29/0.30), with sides slightly diverging toward slightly acute basal angles, apex about as wide as base (PB/PA 1.0–1.04).

7(8) Elytra shorter and wider (EL/EW~1.17, EW/PW~2.05). Genae indistinct. Extreme pronotal apex finely and densely strigose. Tergite VIII rather sparsely punctate and shiny due to rather superficial isodiametric microsculpture. Antennae barely shorter, antennomere 4 short (A4L/A3L 0.71–0.73) .... *S. montanus* **sp.n.**

8(7) Elytra slightly longer and narrower (EL/EW 1.40, EW/PW 1.92). Genae distinct (GL/OL 0.26). Extreme pronotal apex smooth. Tergite VIII rather densely punctate and fairly dull due

to coarse microsculpture. Antennae barely longer, antennomere 4 a bit longer (A4L/A3L 0.87) .... *S. similis* (Fedorenko, 2013)

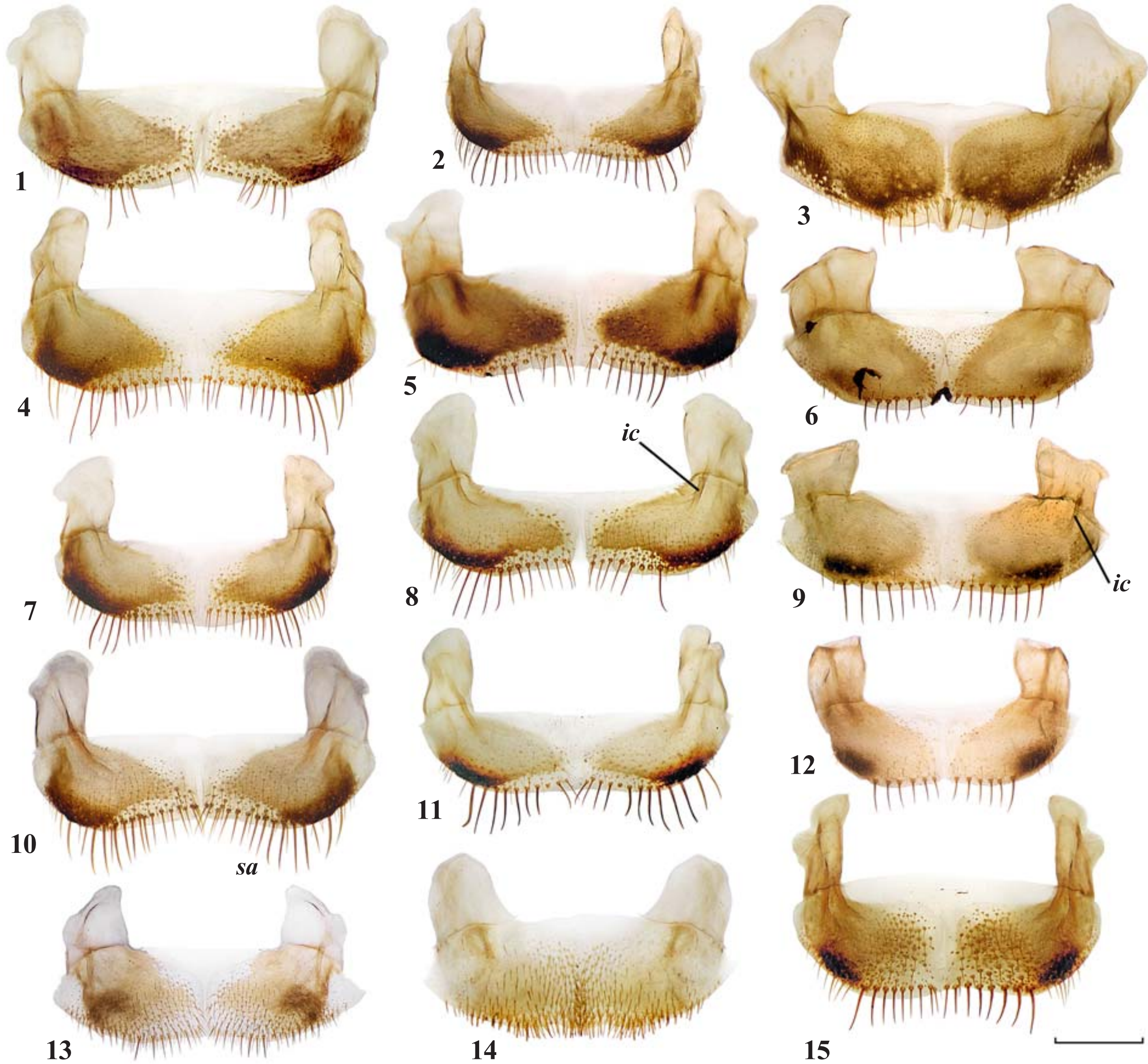
9(2) Elytral ridges 7 and 8 rather weak, very weak to obliterate basally, ridge 6 often vague or obliterate in basal 1/3–1/5. Propleura at least sparsely pilose in apical half. Body dorsum darker, mostly brown to black and often also distinctly pilose. Head anteriorly pale or infuscated. In female, tergite VII and sternite VIII with apical setae strong and incurved, about a dozen on each side of the latter (Figs 1–2, 4–5, 7–8, 10–11, 49). Internal sac of aedeagus asymmetric, with double proximal basal bulb and a distinct distal basal bulb on left side (Figs 54–61, 64–65, 68–69) .... The ***dissolutus***-group.

10(17) Pronotal notopleura in dorsal view glabrous in at least basal half; if 1–3 short setae traceable, then elytral ridges very fine throughout and vague basally. Notopleura mostly imperceptible in front of basal angles in dorsal view. Gonocoxite IX short and slightly curved in female.

11(12) Pronotum and notopleura in dorsal view impunctate and glabrous, body dorsum otherwise subglabrous, with few setigerous punctures behind eyes; elytral disc with a few short setae here and there and sparse microscopic pilosity. Body slender. Aedeagus apex tapered, in dorsal view triangular and short, with sides nearly straight; internal sac with distal basal bulb large and long (Figs 57, 61) .... *S. glabricollis* **sp.n.**

12(11) Pronotum distinctly pilose and punctate at least laterally and apically.

13(16) Pronotum rather sparsely pilose, notopleura in basal half, disc and often also middle of base glabrous. Elytra subglabrous, with ridge 6 mostly obliterate basally. Neck distinctly rugose.



Figs 1—15. Sternite VIII in female: 1 — *Stenaptinus beckeri*; 2 — *S. tamdaoensis*; 3 — *S. tripustulatus*; 4 — *S. dissolutus* from China; 5 — *S. obliteratus*; 6 — *S. montanus* **sp.n.**; 7 — *S. dissolutus* from Vietnam; 8 — *S. guanxiensis*; 9 — *S. bidoupensis*; 10 — *S. dissolutus kalyakini*; 11 — *S. glabricollis* **sp.n.**; 12 — *S. ngoclinhensis*; 13 — *S. bipartitus*; 14 — *Pheropsophus ecuadorensis* Hubenthal, 1911; 15 — *S. lissoderus* from Thailand; ***ic*** — internal carina; ***sa*** — apical setae. Scale bar: 1 mm.

Рис. 1—15. Стернит VIII самки: 1 — *Stenaptinus beckeri*; 2 — *S. tamdaoensis*; 3 — *S. tripustulatus*; 4 — *S. dissolutus* из Китая; 5 — *S. obliteratus*; 6 — *S. montanus* **sp.n.**; 7 — *S. dissolutus* из Вьетнама; 8 — *S. guanxiensis*; 9 — *S. bidoupensis*; 10 — *S. dissolutus kalyakini*; 11 — *S. glabricollis* **sp.n.**; 12 — *S. ngoclinhensis*; 13 — *S. bipartitus*; 14 — *Pheropsophus ecuadorensis* Hubenthal, 1911; 15 — *S. lissoderus* из Таиланда; ***ic*** — внутренний киль; ***sa*** — апикальные щетинки. Масштаб: 1 мм.

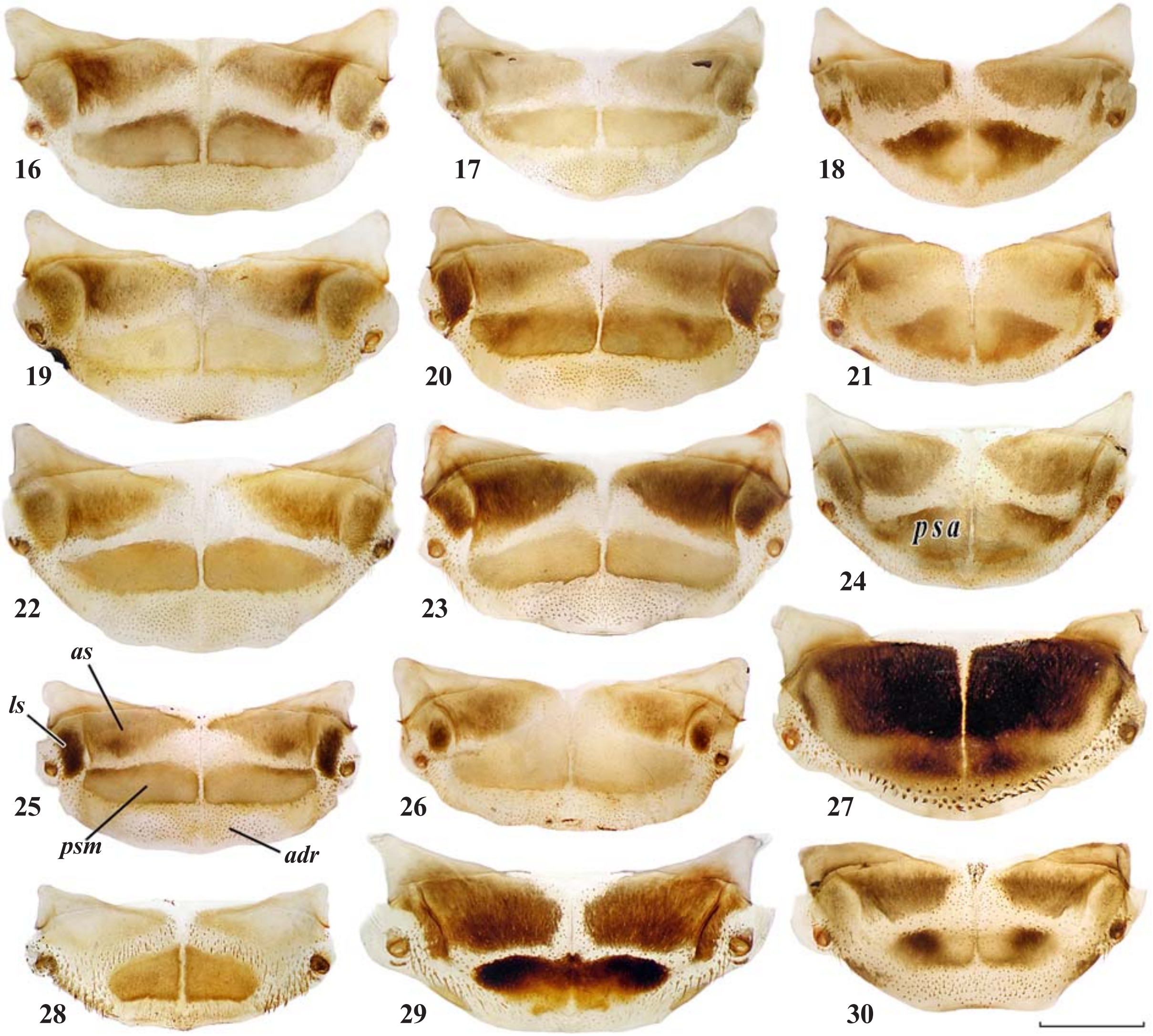
14(15) Body robust, EL/EW 1.12–1.29 (1.21), PW/PL 0.93–0.98 (0.96). Pronotum broadest a third from apex. Elytral ridges rather wide, ridge 6 obliterate at or widely interrupted just behind base. Aedeagus with a very distinctive apex (Fig. 58) .... *S. obliteratus* Fedorenko, 2013

15(14) Body slender, EL/EW 1.18–1.39 (1.30), PW/PL 0.82–0.92 (0.87). Pronotum broadest a fourth from apex. Elytral ridges very fine to subcostate toward base, ridge 6 mostly obliterate basally. Aedeagus apex in lateral view slightly tapered, with tip blunt; in lateral view subtriangular, with left margin straight, right margin convex, and tip wide and sidelong (Figs 55–56)...... *S. dissolutus* (Andrewes, 1923)

16(13) Pronotum, including disc, rather densely pilose, notopleura in basal half glabrous, more seldom with several short setae. Elytra distinctly pilose, ridges very fine all along to obliterate just basally, ridge 6 mostly entire. Genae rather short and very smoothly extended into neck. Neck often finely rugose. Aedeagus apex in lateral view tapered, in dorsal view very long, triangular, with right margin straight, left margin convex and tip narrow; internal sac with distal basal bulb very large, as large as aedeagus apex in dorsal view, and body very convex dorsobasally and barely separated from proximal basal bulbs in lateral view (Figs 65, 69) .... *S. tamdaoensis* (Kischenhofer, 2010)

17(10) Pronotal notopleura in dorsal view distinctly pilose in basal half.

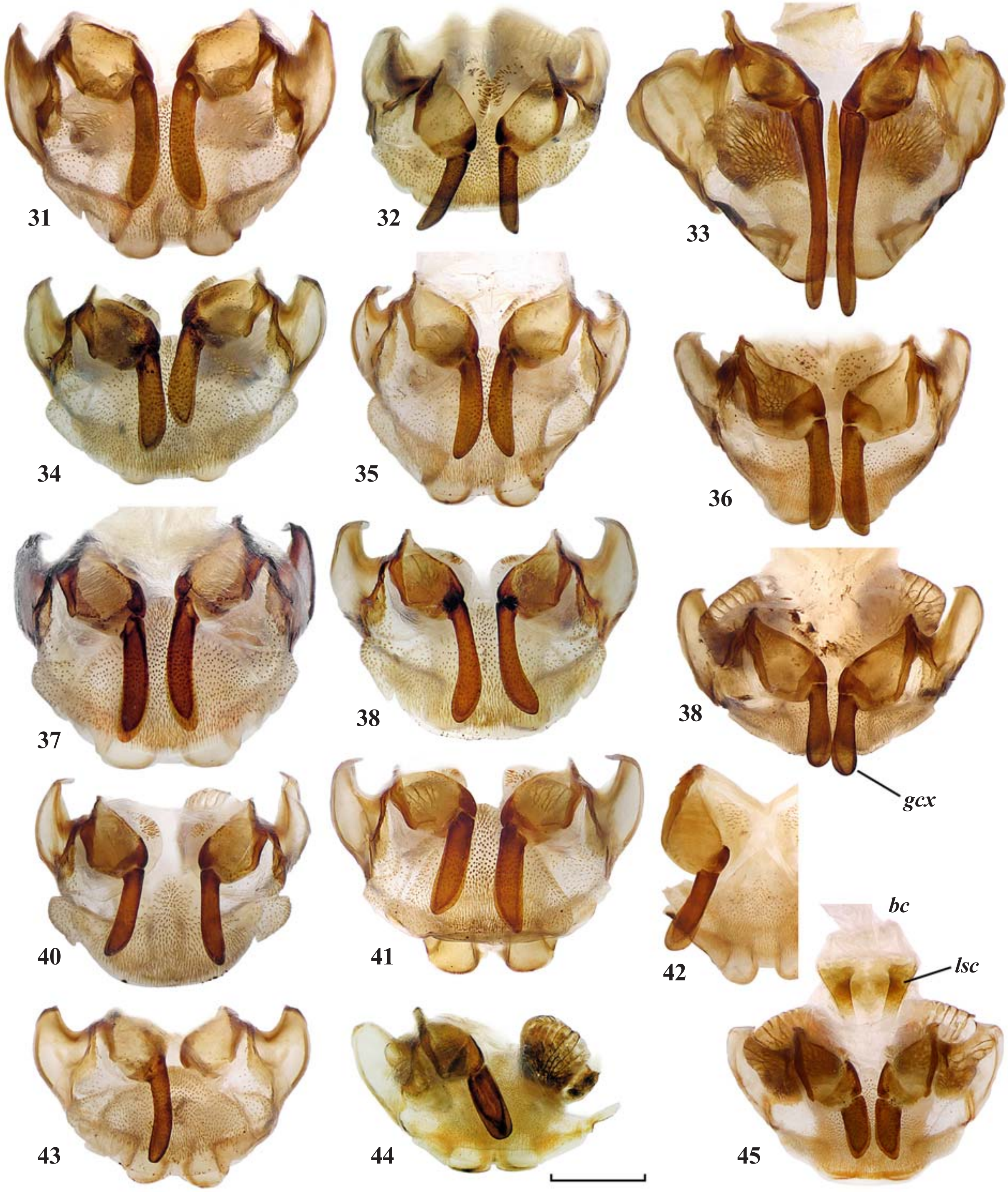
18(19) Pronotal notopleura rather sparsely pilose, more so medially. Pilosity otherwise distinct on pronotum, including disc,



Figs 16—30. Tergite VIII in female: 16 — *Stenaptinus beckeri*; 17 — *S. tamdaoensis*; 18 — *S. ngoclinhensis*; 19 — *S. dissolutus* from China; 20 — *S. guanxiensis*; 21 — *S. montanus* **sp.n.**; 22 — *S. dissolutus kalyakini*; 23 — *S. obliteratus*; 24 — *S. bidoupensis*; 25 — *S. dissolutus* from Vietnam; 26 — *S. glabricollis* **sp.n.**; 27 — *S. tripustulatus*; 28 — *Pheropsophus ecuadorensis*; 29 — *S. bipartitus*; 30 — *S. lissoderus* from Thailand; ***adr*** — apical depigmented region; ***as*** — anterior sclerotized region; ***psa*** — postero-apical sclerotized region; ***psa*** — posteromedian sclerotized region. Scale bar: 1 mm.

Рис. 16—30. Тергит VIII самки: 16 — *Stenaptinus beckeri*; 17 — *S. tamdaoensis*; 18 — *S. ngoclinhensis*; 19 — *S. dissolutus* из Китая; 20 — *S. guanxiensis*; 21 — *S. montanus* **sp.n.**; 22 — *S. dissolutus kalyakini*; 23 — *S. obliteratus*; 24 — *S. bidoupensis*; 25 — *S. dissolutus* из Вьетнама; 26 — *S. glabricollis* **sp.n.**; 27 — *S. tripustulatus*; 28 — *Pheropsophus ecuadorensis*; 29 — *S. bipartitus*; 30 — *S. lissoderus* из Таиланда; ***adr*** — апикальная депигментированная область; ***as*** — передняя склеротизация; ***psa*** — постеро-апикальная склеротизация; ***psm*** — постеро-медиальная склеротизация. Масштаб: 1 мм.

sparser on elytra. Elytral ridges 1–5 well-developed, widened and shiny basally, ridge 6 shortened anteriorly. Head black or not contrastingly pale anterior to mid-eye level, pilose along sides only. Notopleura mostly somewhat incrassate and well visible in dorsal view. Genae fairly convex and long in posterodorsal view, extended into neck at very obtuse yet distinct angle. Aedeagus apex long triangular, tapered closer to tip; internal sac with basal bulbs small, proximal



Figs 31—45. Urite IX ventrally in female: 31 — *Stenaptinus beckeri*; 32 — *S. lissoderus* from Thailand; 33 — *S. tripustulatus*; 34 — *S. dissolutus* from China; 35 — *S. tamdaoensis*; 36 — *S. bidoupensis*; 37 — *S. dissolutus kalyakini*; 38 — *S. guanxiensis*; 39 — *S. montanus* **sp.n.**; 40 — *S. dissolutus* from Vietnam; 41 — *S. obliteratus*; 42 — *S. ngoclinhensis*; 43 — *S. glabricollis* **sp.n.**; 44 — *Pheropsophus ecuadorensis*; 45 — *S. bipartitus*; ***bc*** — *bursa copulatrix*; ***gcx*** — gonocoxite; ***lsc*** — lateral sclerite. Scale bar: 1 mm.

Рис. 31—45. Урит IX самки, вентрально: 31 — *Stenaptinus beckeri*; 32 — *S. lissoderus* из Таиланда; 33 — *S. tripustulatus*; 34 — *S. dissolutus* из Китая; 35 — *S. tamdaoensis*; 36 — *S. bidoupensis*; 37 — *S. dissolutus kalyakini*; 38 — *S. guanxiensis*; 39 — *S. montanus* **sp.n.**; 40 — *S. dissolutus* из Вьетнама; 41 — *S. obliteratus*; 42 — *S. ngoclinhensis*; 43 — *S. glabricollis* **sp.n.**; 44 — *Pheropsophus ecuadorensis*; 45 — *S. bipartitus*; ***bc*** — копулятивная сумка; ***gcx*** — гонококсит; ***lsc*** — латеральный склерит. Масштаб: 1 мм.

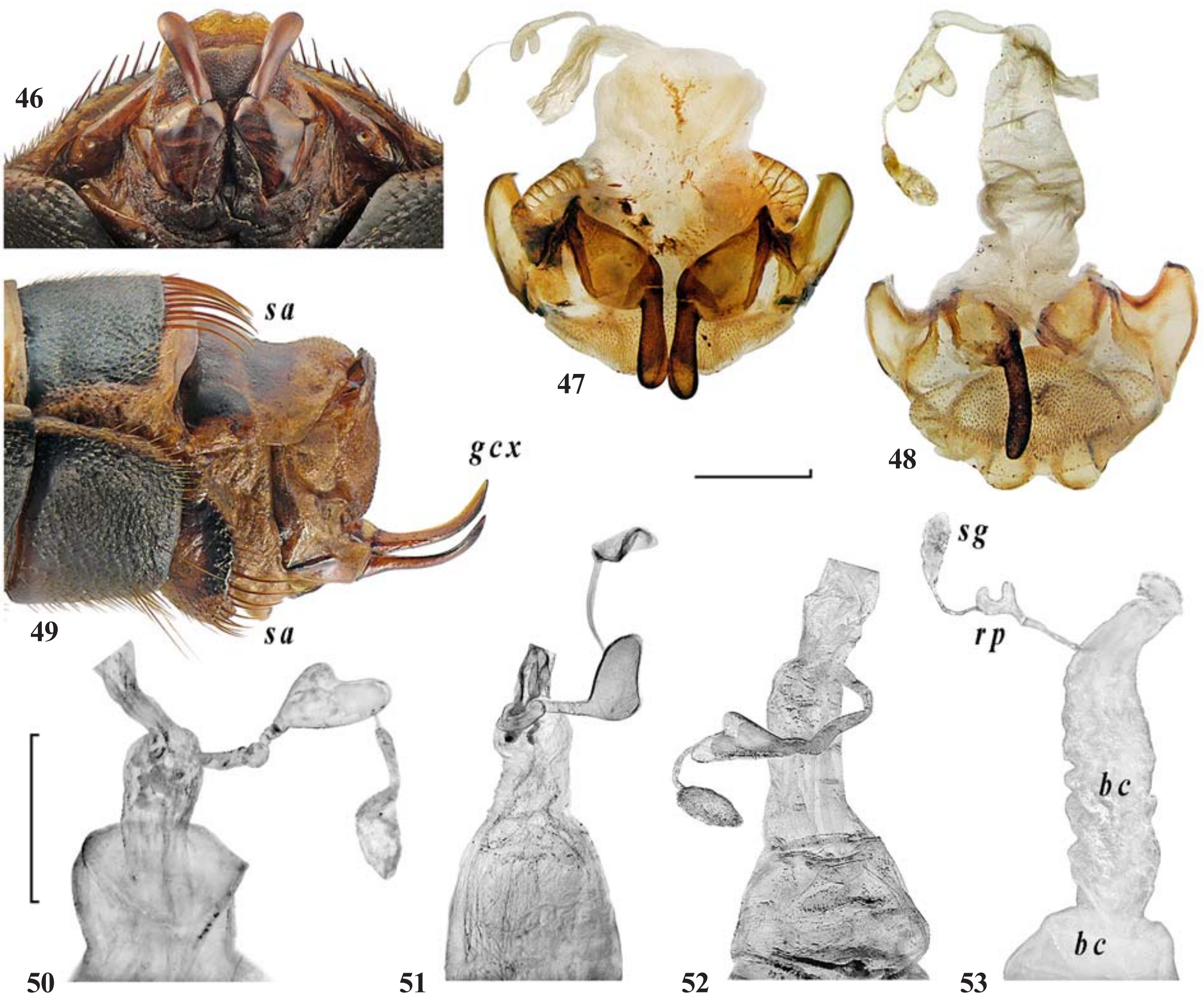
basal bulbs in dorsal view concealed with body of sac, in lateral view meeting it at acute angle (Figs 64, 68). Gonocoxite IX long, slender, subclavate, strongly curved in female (Fig. 38) .... *S. guanxiensis* (Kischenhofer, 2010)

19(18) Entire body, including notopleura, densely or very densely pilose. Head rather contrastingly coloured, pale anterior to mid-eye level, black or dark brown behind. Notopleura invisible in dorsal view. Elytral ridges entire, very fine all along and a little shiny. Genae short. Aedeagus with internal sac similar to that of *S. tamdaoensis*. Gonocoxite IX slightly wider apically than basally and moderately curved in female (Fig. 31). — Southern China .... [*S. beckeri* (Jedlička, 1930)]

20(1) Generally macropterous species. Body dorsum variegated and glabrous or almost so. Elytra maculate, nearly parallel-sided or slightly dilated apicad, with humeri distinct, apices truncate, apical edges minutely setulose, disc glabrous or with very short sporadic setae; ridges wide and only slightly raised (sometimes wings much to totally reduced and/or elytra much broader apically than basally).

21(22) Prosternum and propleura glabrous but 2–6 strong paramedian setae between procoxae. Pronotum impunctate or with very few large punctures; black median stripe not or barely wider in apical than in basal half. Elytron with transverse median band subequally wide, strongly and alternatively dentate at even ridges anteriorly and at odd ridges posteriorly. In female, abdominal tergite VII with 9–17 and sternite VIII with more than a dozen strong apical setae; sternite VIII without medio-apical sclerite; gonocoxite IX rather short and glabrous along dorsal edges; urite X evenly membranous ventrally (Figs 15, 32). Median lobe of aedeagus with apex rounded in cross-section to flattened dorsoventrally, with a distinct fine ventro-apical carina in most species .... The ***javanus***-group.

22(21) Prosternum and often also propleura distinctly and more or less densely pilose in apical half in addition to several stronger setae between procoxae. Pronotum with rather sparse yet distinct coarse punctures toward apex and often also along sides and base; black median stripe often triangular, much wider apically than basally. Elytral transverse median band either in form of a wide spot or clavate toward suture, mostly moderately dentate at ridge 4 or 5, or 4-to-5 anteriorly and posteriorly. In female, abdominal tergite VII with 18–30 and sternite VIII with about ten strong yet rather



Figs 46—53. Apex of abdomen and reproductive tract of female: 46—47 — *Stenaptinus montanus* **sp.n.**; 48 — *S. glabricollis* **sp.n.**; 49 — *S. guanxiensis*; 50 — *S. dissolutus* from Vietnam; 51 — *S. dissolutus* from China; 52 — *S. obliteratus*; 53 — *S. bipartitus*; ***bc*** — *bursa copulatrix*; ***gcx*** — gonocoxite IX; ***rp*** — receptacle; ***sa*** — apical setae; ***sg*** — spermathecal gland. Scale bars: 1 mm.

Рис. 46—53. Вершина брюшка и репродуктивный тракт самки: 46—47 — *Stenaptinus montanus* **sp.n.**; 48 — *S. glabricollis* **sp.n.**; 49 — *S. guanxiensis*; 50 — *S. dissolutus* из Вьетнама; 51 — *S. dissolutus* из Китая; 52 — *S. obliteratus*; 53 — *S. bipartitus*; ***bc*** — копулятивная сумка; ***gcx*** — гонококсит IX; ***rp*** — рецептакул; ***sa*** — апикальные щетинки; ***sg*** — железа сперматеки. Масштаб: 1 мм.

short setae; sternite VIII with a narrow medio-apical sclerite; urite X with a long median sclerotization between grooves for receipt of gonocoxites IX; these very long and sparsely setulose along dorsal edges (Figs 3, 33). Aedeagus with apex of median lobe flattened dorsoventrally, finely longitudinally grooved ventro-apically; internal sac symmetrical, without distal basal bulbs .... The ***tripustulatus***-group.

The *bidoupensis* species group.

DIAGNOSIS. Additional characters not mentioned in the key are as follows: Aedeagus apex nearly symmetric, long, triangular, very pointed, dorsoventrally flattened at base (Figs 62–63, 66–67).

In female, tergite VII with 13–22 apical setae, sternite VIII sparsely pubescent, neither median apical sclerotized process nor membranous area just in front of apical setae; tergite VIII on each side of median line with a triangular median sclerotization (***psa***), apical depigmented region (***adr***) very short, not more than a fourth as long as the tergite along midline, sparsely setulose, without distinct tubercles (Figs 6, 9, 12, 18, 21, 24, 36, 39, 42). Receptacle Y-shaped, its horns slightly unequal in length (Fig. 47). Tergite VII with 13–16 (15, n=13) or 13–15, or 16–21 apical setae in *S. bidoupensis*, *S. ngoclinhensis* (3 ♀♀), and *S. montanus* **sp.n.**, respectively; one female of *S. bidoupensis* from the Chu Yang Sin National Park has 21 setae.

GEOGRAPHIC DISTRIBUTION. Highlands of the Tay Nguen Plateau (Central Highlands) south to the Dalat Plateu within Ha Tinh, Kon Tum, Gia Lai, Dak Lak, Lam Dong, and Khanh Hoa provinces, central and southern Vietnam (Fig. 79).

HABITATS AND HABITS. All the specimens examined were hand collected and/or taken in pitfall traps in broad-leaved monsoon forests at 1400–1650 m elevations. This may suggest that the only known specimen of *S. similis* has been rather occasionally taken at 400–700 m elevation.

COMMENTS. This group includes four very similar species. Because two of them were described based on specimens conserved for long in alcohol, which prevented the internal sac of aedeagus from being properly prepared, everted and inflated internal sacs have been compared in two species only. Their great similarity (Figs 62–63, 66–67) may suggest subspecies rather than species status of some taxa. But the results obtained for females point to the contrary, since gonocoxite IX is distinctly longer in *S. bidoupensis* than in the other two species examined (Figs 36, 39, 42, 46).

Four species outside Vietnam, *S. krichna* (Maindron, 1906) = *scythropus*: (Kirschenhofer, 2010), *S. scythropus* (Andrewes, 1923), *S. andrewesi* (Jedlička, 1964), and *S. nepalensis* (Kirschenhofer, 2010), match well diagnostic features other than genitalic ones of the *bidoupensis*-group. All the species have the elytral ridges well-developed, narrow and entire, and occur in the regions adjacent to Indochina, *i.e*., northeastern India, eastern Nepal, Bhutan, etc. *Stenaptinus krichna* is distinctive in having black legs (*vs*. pale in the other species) and the remaining three are very similar. Out of them, *S. andrewesi* has the head nearly black (*vs*. anteriorly pale) and pronotal sides slightly converging to nearly right basal angles (*vs*. diverging slightly toward slightly acute basal angles in *S. scythropus* or running parallel in front of right basal angles in *S. nepalensis*).

Stenaptinus montanus Fedorenko, **sp.n.**
Figs 6, 21, 39, 46–47, 62, 66, 75.

MATERIAL. Holotype ♀ (ZMMU) and two paratypes, ♂♀, labelled: 'Vietnam, Gia Lai Province, ~40 km ENE of Pleiku, 14º13´21´´N/ 108º19´55´´E, Kon Ka Kinh Nat[io]n[al]. Park, h=1490 m, 21–30.V.2017, D. Fedorenko leg.'.

Aedeagus compared with those of the male holotype of *S. similis*, seven males of *S. bidoupensis* and two males of *S. ngoclinhensis*.

DIAGNOSIS. As specified in the key. For comparison see also Tab. 1.

DESCRIPTION. BL 13–14 mm. Body (Fig. 75) moderately shiny; pronotum dark brown to almost black, elytra dark brown to medially brown, pro-, meso-, metapleura, and abdomen rather dark brown; entire head, prosternum, meso- and metaventrites, mouthparts, antennae basally and legs reddish yellow, antennae toward apices brownish, apical halves of mandibles infuscated, antennomere 3 in basal half less so; apices of elytral ridges reddish. Vertex with a subquadrate, slightly transverse, cloudy, brown to dark brown spot not well separated from reddish brown or (♂) merged into dark brown neck.

Microsculpture isodiametric superficial on head and pronotum, longitudinal over elytra, superficial along ridges and coarse in between. Elytra densely longitudinally carinulate between ridges, carinulate sculpture transformed into nearly aciculate one at base.

Dorsum subglabrous, with a group of setigerous punctures just behind supraocular seta. Pronotum with very few short setae basally. Elytra distinctly pilose along sides and in interval 1 in basal third, sparsely setulose close to apices, with very few short setae here and there. Venter densely pilose, prosternum less so, propleura and notopleura impunctate and glabrous.

Head smooth, coarsely rugose across neck, more so laterally, with large and moderately convex eyes; genae nearly indistinct, smoothly extended into neck. Clypeus more or less sinuate apically. Labrum truncate, with widely rounded angles.

Pronotum cordate, as wide as long, barely wider than head, broadest almost a third from apex. Base barely wider than apex, basal and apical margins barely concave. Sides evenly S-shaped, rounded in apical half, sinuate in front of and diverging toward acute and blunt basal angles. Reflexed lateral margin narrow, distinct throughout its length. Transverse impressions vague, basal straight, apical V-shaped, median line fine between them, otherwise obliterate.

Elytra fairly short. Ridges narrowly costate, entire basally, ridges 6–8 carinate or almost so, ridges 7 and 8 sharply carinate toward base, ridge 8 shortened apically. Long setae: a few in interval 2, one in interval 3 just preapically and in interval 5 in basal third, occasionally interval 4 with 1–2 setae at middle.

Abdomen (Figs 6, 21): Tergite VII finely and densely punctate and setulose, dull due to coarse isodiametric microsculpture, with 16–21 long and straight apical setae in female; tergite VIII very sparsely and finely punctate, with isodiametric microsculpture obliterate in basal half and rather superficial in apical half. Sternites IV—VI at apex with one pair of obligatory median setae; sternite VII with two pairs of long obligatory setae and several shorter setae in between.

Legs: as for the subgenus. Profemora tumid laterally in male.

Aedeagus (Figs 62, 66): apex of median lobe almost symmetrical, pointed, very gently concave at left margin and convex at right margin, and thence very slightly curved; internal sac similar to that of *S. bidoupensis*.

Female gonocoxite IX short, straight, clavate, similar to that of *S. ngoclinhensis* in shape (Figs 39, 46–47).

GEOGRAPHIC DISTRIBUTION. Only known from the type locality.

NAME. Refers to the collecting circumstance of the specimens taken near the highest point of a mountain ridge.

HABITATS AND HABITS. All the three specimens have been collected in pitfall traps in a broad-leaved monsoon forest at about 1500 m elevation. Another sympatric species, *S. obliteratus*, has only been found to inhabit similar biotopes at 700–900 m altitudes in the locality.

The ***dissolutus*** species group.

DIAGNOSIS. As for the previous species group except as follows: Aedeagus apex mostly triangular, slightly asymmetric, long to short, pointed to blunt (Figs 54–61, 64–65, 68–69). In female, tergite VII with 10–17 apical setae, sternite VIII densely pubescent, desclerotized just in front of apical setae; tergite VIII on each side of median line with ***psm*** transverse and slightly narrower laterally, ***adr*** long, about a third as long as the tergite along midline, densely setulose and minutely tuberculate (Figs 1–2, 4–5, 7–8, 10–11, 16–17, 19–20, 22–23, 25–26; tubercles visible in dry specimens only!). Urite IX as in Figs 31, 34–35, 37–38, 40–41, 43. Receptacle Y-shaped, with horns well to almost indistinctly separated (Figs 48, 50–52).

GEOGRAPHIC DISTRIBUTION. Northern Indochina, including Vietnam south to Ha Tinh Province (Fig. 79), northern Laos, northern Thailand, and southern Chinese provinces: Hubei, Sichuan, Chongqing, Yunnan, Guanxi, Fujian, Jiangxi.

While the agults are constantly apterous and occur in highlands, many species of the group are known to be widespread.

HABITATS AND HABITS. The species of the group dwell in montane tropical rainforests at 1000–1700 m altitudes and some of them (e.g., *S. dissolutus*) occur also at lower heights of 400–1350 m. Three species, *S. tamdaoensis*, *S. glabricollis* **sp.n.**, and *S. guanxiensis* Kischenhofer, 2010, have been found to be sympatric in at least two localities, the environs of Sa Pa (Lao Cai Province) and the Phia Oac Mt. (Cao Bang Province). In the latter locality, *S. tamdaoensis* has been found to be frequent at 1600–1760 m altitudes, while sharing a habitat at 1600 m altitude with *S. glabricollis* **sp.n.** and another habitat at 1760 m altitude with *S. guanxiensis*. This latter is a high-montane species occurring at 1760–1860 m elevations.

COMMENTS. This group includes eight described species. All of them are very similar in appearance, for which reason at least some may have been confused. Accordingly, certain faunal records, species ranges, and validity of some species need clarification.

Stenaptinus dissolutus (Andrewes, 1923), **stat.rest.**
Figs 7, 10, 22, 25, 37, 40, 50–51, 55, 59, 70.

Andrewes, 1923: 221 (*Pheropsophus scythropus* var.; Laos); 1930: 276; Csiki, 1932: 1597. — *scythropus* (part.): Lorenz, 1998: 15; 2005: 15; Hrdlička, 2003: 218; 2017b: 480. — ssp. *kalyakini* Fedorenko, 2013: 279 (*Pheropsophus*; Central Vietnam), **stat.n.**

MATERIAL. 14 specimens (SIEE) from northern Vietnam, including 2♀♀, Phu Tho Province, ~ 90 km W of Hanoi, Xuan Son National Park, 21°07′52″ N/ 104°57′07″ E, h=400–470 m, 6–15.VI.2014, D. Fedorenko leg.; 2♂♂, 2♀♀, same data, except for 21°08′12″N/ 104°57′04″E, h=450 m, 27.VI–7.VII.2014, A. Abramov & A. Shchinov leg.; ♀, Son La Province, Moc Chau, 15.V.1991, Joint Russia-Vietnam Tropical Center; 2♂♂, 2♀♀, Nghe An Province, Que Phong District, Pu Hoat National Park, 19°45′42′′N/ 104°47′28′′E, h=1130 m 15–27.V.2019, leg.D. Fedorenko; 2♀♀, same data, except for 19°45′N/ 104°46′38″E, h=1220 m; ♀, same data, except for 19°46′12″N/ 104°48′16″E, h=1340 m. — Holotype ♂ (ZMMU) and 8 paratypes (SIEE) of *S. kalyakini*, including 4♂♂, 3♀♀ labelled: 'Central Vietnam, Ha Tinh Prov[ince]., Vu Quang (Phu Quon) [Nature] reserve, h~1.200 m, 5–26.VIII.1997, leg. M. Kaliakin'; and ♀ with same data label, except for h~400–700 m, 27.VIII—4.X.1997.

Additional material (SIEE, MPSU): 4♂♂, 3♀♀, China, Southern Sichuan, env. Xichang, h=1600 m, 21.V.2018, leg. A. Gorodinski; ♂♀, same data except 18.VII.2001.

Aedeagus examined in eight males, four from Vietnam and four from China.

REDESCRIPTION. BL 12.6–14.9 mm. Body (Fig. 70) a little shiny, dorsally brown to (mostly) black; supra-antennal plates, mouthparts, legs and antennae reddish yellow; femoral apices slightly to indistinctly infuscated on sides. Head black, with labrum pale laterally, to reddish in front of eyes, with pale colour medially reaching mid-eye level; this pale pattern mostly infuscated, so that two cloudy median patches are only traceable, subtransverse clypeal and small frontal at mid-eye level. Ventral side dark coloured along sides, reddish medially. Abdominal sternites each dark brown apically and laterally, mostly deep red to reddish-brown in basal two thirds. Head ventrally red to brown black, with gula pale.

Head and pronotum with fairly coarse isodiametric microsculpture; elytral microsculpture distinct, consisting of longitudinal meshes along ridges and of coarse and very longitudinal meshes in between, being hardly traceable in specimens with very dense carinulate sculpture.

Dorsum subglabrous, head laterally with sparse or very sparse setigerous punctures, a few just behind and up to seven before supra-ocular seta; genae sparsely to moderately pilose below and just behind eyes. Pronotum rather sparsely pilose and punctate along sides (mostly in basal two thirds) and in apical third or along apex only, sometimes almost glabrous. Elytra sparsely pilose along sides and at apices, otherwise with very few short setae here and there in addition to sparse and nearly indistinct microscopic ciliae. Venter densely pilose, propleura very sparsely pilose in apical third, notopleura glabrous.

Head rather smooth medially, with sparse microscopic punctures, finely striated to rugulose along sides of frons to vertex, coarsely rugose across neck. Eyes medium-sized, convex or slightly flattened, genae very smoothly extended into neck, nearly indistinct to fairly long. Frons in lateral view slightly convex to slightly concave, frontal foveae in form of wide and shallow grooves, slightly deeper to somewhat pit-like just behind frontoclypeal suture, slightly converging basad and not quite reaching mid-eye level, extended onto clypeus into rather deep and wide grooves diverging and disappearing outside or adjoining, or almost reaching clypeal seta. Clypeus more or less sinuate apically. Labrum apically truncate to convex, with widely rounded angles.

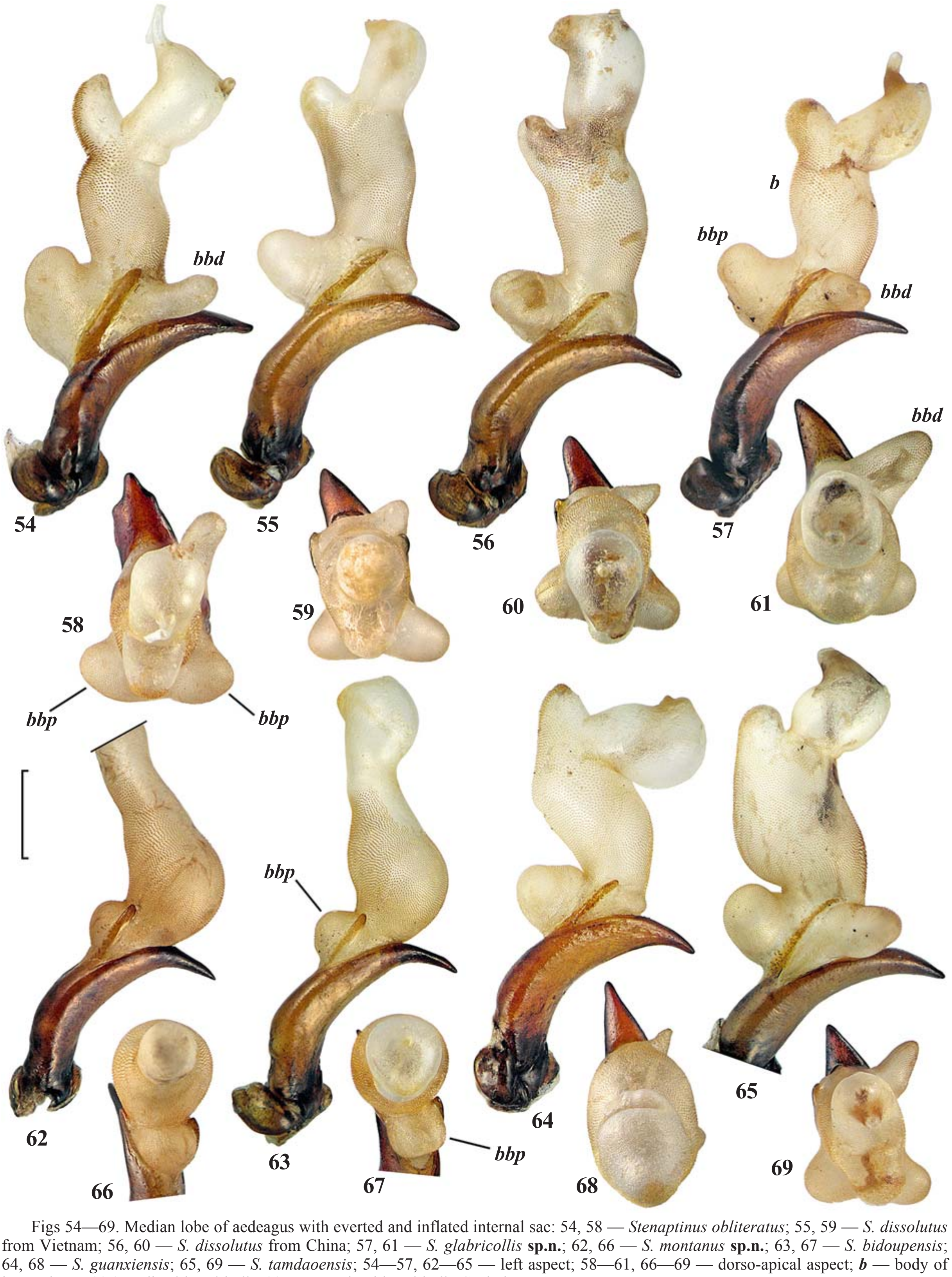
Pronotum cordate, barely longer than wide, as wide as head, broadest a fourth from apex. Base as wide as apex, basal margin barely concave to truncate, or barely convex medially, apical margin barely or slightly concave. Sides finely beaded, evenly S-shaped, rounded in apical half, sinuate in front of and diverging toward basal angles; these slightly acute to nearly right, mostly rather sharp, not seldom distinctly acute due to apices projecting slightly basad or laterobasad. Transverse impressions vague, basal straight, apical V-shaped, median line fine between them, otherwise obliterate. Basal foveae vague, running more or less parallel to lateral margin in basal half or almost reaching apex.

Elytral ridges fine, those 2 to 5 often wider, slightly to indistinctly broadened basally, 8th slightly shortened apically and often also basally, 6th obliterate, sometimes hardly traceable, in basal 1/7–2/5 (mostly 1/4–1/5). Chetotaxy as for *S. montanus*.

Abdomen (Figs 7, 10, 22, 25): Tergite VII dull due to coarse isodiametric microsculpture, coarsely and densely punctate and setulose, with 1–2 fine punctures between coarse ones; with a row of 12–17 long apical setae curved ventrad in female; tergite VIII very sparsely and finely punctate, shiny in basal half and dull behind due to isodiametric microsculpture either very superficial to obliterate or coarse, respectively. Chetotaxy as for *S. montanus*.

Legs: as for subgenus. Profemora in dorsal view slightly tumid in male.

Aedeagus (Figs 55, 59): apex of median lobe in lateral view slightly tapered, with apex blunt, in dorsal view subtriangular, with left margin straight and right margin convex; its tip wide, often sidelong (and thence looking somewhat pointed); internal sac with distal basal bulb small, smaller than aedeagus apex in dorsal view; body subcylindric and well separated from proximal basal bulbs in lateral view.



Figs 54—69. Median lobe of aedeagus with everted and inflated internal sac: 54, 58 — *Stenaptinus obliteratus*; 55, 59 — *S. dissolutus* from Vietnam; 56, 60 — *S. dissolutus* from China; 57, 61 — *S. glabricollis* **sp.n.**; 62, 66 — *S. montanus* **sp.n.**; 63, 67 — *S. bidoupensis*; 64, 68 — *S. guanxiensis*; 65, 69 — *S. tamdaoensis*; 54—57, 62—65 — left aspect; 58—61, 66—69 — dorso-apical aspect; ***b*** — body of internal sac; ***bbd*** — distal basal bulb; ***bbp*** — proximal basal bulb. Scale bars: 1 mm.

Рис. 51—66. Средняя доля эдеагуса с вывернутым и надутым внутренним мешком: 54, 58 — *Stenaptinus obliteratus*; 55, 59 — *S. dissolutus* из Вьетнама; 56, 60 — *S. dissolutus* из Китая; 57, 61 — *S. glabricollis* **sp.n.**; 62, 66 — *S. montanus* **sp.n.**; 63, 67 — *S. bidoupensis*; 64, 68 — *S. guanxiensis*; 65, 69 — *S. tamdaoensis*; 54—57, 62—65 — слева; 58—61, 66—69 — дорзо-апикально; ***b*** — тело внутреннего мешка; ***bbd*** — дистальный базальный пузырь; ***bbp*** — проксимальный базальный пузырь. Масштаб: 1 mm.

Female gonocoxite IX ensiform, slightly curved laterad, and slightly dilated apically (Figs 37, 40). Receptacle incrassate, slightly to indistinctly Y-shaped, with shorter horn barely separated from or absorbed by a longer horn, respectively (Figs 50–51).

GEOGRAPHIC DISTRIBUTION. Northern Laos and northern Vietnam (Phu Tho, Son La, Nghe An, and Ha Tinh provinces); southern China (Sichuan and Yunnan).

HABITATS AND HABITS. Major part of specimens examined have been hand collected or taken using pitfall traps in montane monsoon broad-leaved forests at 400–1340 m altitudes.

COMMENTS. This species was described and then considered as the eastern subspecies (variety) of *S. scythropus* [Andrewes, 1923, 1930; Csiki, 1932] until listed as its junior synonym by Lorenz [1998], and authors followed him repeatedly. The original description, however, makes no doubt about not only species status but also rather distant relationship of *S. scythropus* and *S. dissolutus*.

My re-examination of *S. kalyakini* has revealed that its major distinctive feature, *i.e.*, no distal basal bulb in the inverted and inflated internal sac of aedeagus, had come from confusion. Because the dissected male paratype conserved for long in alcohol, this bulb proved to be not everted through preparation and thence invisible. The other differences of *S. kalyakini* from *S. dissolutus* are subtle. The elytral ridges are entire (*vs*. obliterate in eleven or very superficial in three examined specimens of *S. dissolutus*); the pronotum barely longer, PW/PL 0.82–0.88 (0.84), and BL 13.6−15.6 mm (mere formality). This, combined with distribution patterns of the two species compared, invites hardly more than subspecies status for *S. kalyakini*.

Another local population from Sichuan, China, is very similar to the other ones of *S. dissolutus* in all adult characters, including aedeagal ones (Figs 56−57, 59–60), but dorsal pilosity slightly denser and female gonocoxite IX slightly shorter (compare Fig. 34 and Fig. 37 or 40). On the other hand, the locality recorded is much closer to the only known locality of *S. yunnanensis* (Gongshan, northwestern Yunnan, China) than to any hitherto recorded locality of *S. dissolutus*. According to the description, *S. yunnanensis* is only based on the female holotype and has no difference from *S. dissolutus* other than densely pilose elytral intervals. To clarify interrelations of the three taxa more material is required.

Stenaptinus guanxiensis (Kischenhofer, 2010)
Figs 8, 20, 38, 49, 64, 68, 73.

Kischenhofer, 2010: 34, 38 (*Pheropsophus*; Yuanbao Mts, N-Guanxi, China); Hrdlička, 2017b: 479.

MATERIAL. 44 specimens (SIEE, ZISP): Northern Vietnam, Lao Cai Province: 3♂♂, 40 km WNW of Lao Cai, env. Y Ty, Bat Xat National Park, 22°37′—37.6′N/ 103°37.3′–38.3′E, h=1600–1900 m, 16–21.X.2018 (D. Fedorenko); 6♂♂, 9♀♀, same data, except for 22°37′36′′N/ 103°37′32′′E, h=1850 m, 4–14.VI.2019 (D. Fedorenko); ♀, Lao Cai Province, Sa Pa Distr., Phang Xi Pang Mt., 22°18′59′′N, 103°49′15′′E, 1200 m, 12–25.V.1999 (N.L. Orlov); 3♂♂,♀, mountains near Sa Pa, 1600–2000 m, 24.V.1963 (O.N. Kabakov); Cao Bang Province: 8♂♂, 11♀♀, 40 km W of Cao Bang, Phia Oac Mt., 22º36′50′′N/ 105º52′0′′E, h~1760–1860 m, broad-leaved & bamboo forest, 3–11.X.2018 (D. Fedorenko); ♀, same data, except for 22º36′25′′N/ 105º52′08′′E, h~1650–1700 m; ♂, [Vinh Phuc Province] Tam Dao, 8–13.IV.1986 (Gorokhov).

Aedeagus examined in 14 males.

REDESCRIPTION. As for the previous species except as follows: BL 11.9–15.3 mm. Body (Fig. 73) dorsally black to brown, with entire head and pronotum red in the latter case; head pattern similar. Head and pronotum rather shiny due to superficial microsculpture. Pilosity (and punctures on head and pronotum) fairly dense. Head rather densely punctate along sides, distinctly in front of supra-ocular seta, glabrous medially. Pronotum moderately densely and evenly pilose or slightly less densely on disc, pilosity very distinct on notopleura in at least basal half. Propleura in apical half and elytra sparsely to moderately pilose.

Head: genae rather long, slightly convex and slightly more distinct than in the other species of the group due to a bit less obtuse gena-to-neck angle; frontal foveae not extended onto clypeus.

Pronotum similar, except for notopleura often tumid and sides parallel in front of right basal angles.

Elytra on average narrower relative to pronotum. Ridges 1–5 well-developed, widened toward base, subcostate and shiny in at least basal 1/4–1/3. Chetotaxy similar (varying, often with more than one seta along interval 5).

Abdomen (Figs 8, 20, 49): Tergite VII with coarse punctures barely denser and very few fine punctures only traceable here and there; with a row of 13–19 apical setae in female.

Aedeagus (Figs 64, 68): apex in lateral view tapered, in lateral view symmetric, long, triangular, with sides barely constricted before rather pointed tip. Internal sac with basal bulbs small; proximal ones in dorsal view concealed with the body, in lateral view, adjoining the body basally.

Female gonocoxite IX long, ensiform and subclavate, rather strongly curved laterad (Fig. 38, 49). Receptacle not Y-shaped owing to horns incrassate, with one of them absorbed as in Fig. 51.

GEOGRAPHIC DISTRIBUTION. Southern China (Guanxi), northern Vietnam (Cao Bang, Vinh Phuc, and Lao Cai provinces); supposedly northern Laos and Yunnan, China.

HABITATS AND HABITS. A high-montane species that dwell in rain broad-leaved forests with considerable admixture of bamboo trees at 1600–2000 m, occasionally at 1200 m, altitudes. It has been found to be sympatric with *S. tamdaoensis* and *S. glabricollis* **sp.n.**, while sharing some habitats with *S. tamdaoensis*, in the Phia Oac National Park.

Stenaptinus tamdaoensis (Kischenhofer, 2010)
Figs 2, 17, 35, 65, 69, 72.

Kischenhofer, 2010: 33, 38 (*Pheropsophus*; Tam Dao, N-Vietnam).

MATERIAL. 51 specimens, including nine (ZISP): ♂, Northern Vietnam, Lao Cai Province, Phang Xi Pang Mt., 5.III.1962 (O.N. Kabakov); ♂, mountains near Sa Pa, 1600–2000 m, 24.V.1963 (O.N. Kabakov); ♂♀, Vinh Phuc/Thai Nguen Province, mountains near Tam Dao, 900 m, 9.VI.1963 (O.N. Kabakov); 3♂♂, 2♀♀, Tam Dao, 8–13.IV.1986 (Gorokhov). 42 specimens (SIEE): 2♂♂, 2♀♀, Cao Bang Province, 40 km W of Cao Bang, Phia Oac Mt., 22º36′50′′N/ 105º52.0′E, h~1760 m, broad-leaved & bamboo forest, 3–11.X.2018 (D. Fedorenko); 10♂♂, 18♀♀, same data, except for 22º36′30′′N/ 105º52′20′′E, h~1600–1650 m, broad-leaved forest; ♂, same data, except for 22º37′40′′N/ 105º54′40′′E, h~850 m, boggy wasteland; 4♂♂, 5♀♀, same data, except for 22º36′27′′N/ 105º52.0′E, h=1600–1800 m, 22.V–6.VI.2018 (A. Abramov).

Aedeagus examined in 14 males.

REDESCRIPTION. Very similar to a *S. guanxiensis* in most characters except as follows: Body (Fig. 72) generally smaller, BL 10.4–13.2 mm, and paler in colour, yellowish red, with elytra rather pale brown, to dorsally black, with head indistinctly pale in front of mid-eye level; when traceable, pale pattern on head not or little contrasting, often U-shaped or distinct only laterally due to frons infuscated between frontal foveae. Body little shiny, with rather coarse microsculpture. Pilosity (and punctation of head and pronotum) usually slightly denser, more so on pronotum and elytra. Prothoracic notopleura glabrous in basal half, with a few short and erect setae only traceable in specimens with very dense body pilose.

Head: genae mostly short and smoothly extended into neck; frontal foveae varying considerably in depth, from vague, very shallow, not extended onto clypeus, to deep, pit-like at frontoclypeal suture and reaching clypeal seta. Pronotum as for


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Figs 70—75. Dorsal habitus: 70 — *Stenaptinus dissolutus* from Vietnam; 71 — *S. dissolutus* from China; 72 — *S. tamdaoensis*; 73 — *S. guanxiensis*; 74 — *S. obliteratus*; 75 — *S. montanus* **sp.n.**, male, paratype.

Рис. 70—75. Габитус, дорзально: 70 — *Stenaptinus dissolutus* из Вьетнама; 71 — *S. dissolutus* из Китая; 72 — *S. tamdaoensis*; 73 — *S. guanxiensis*; 74 — *S. obliteratus*; 75 — *S. montanus* **sp.n.**, паратип, самец.

S. dissolutus. Elytral ridges very fine all along, some of them not seldom broken in basal half, ridge 6 mostly entire.

Abdomen (Figs 2, 17): Tergite VII densely and rather finely punctate and pilose, with a row of 14–16 apical setae in female and minute punctures almost imperceptible, very few and very shallow.

Aedeagus (Figs 65, 69): apex in lateral view tapered, in lateral view long, triangular, with right margin straight and left margin slightly convex. Internal sac with distal basal bulb very large, as large as aedeagus apex in dorsal view; body in lateral view inflated dorsobasally and almost adjoining proximal basal bulbs.

Female gonocoxite IX ensiform, rather short and slightly curved (Fig. 35). Receptacle as in *S. guanxiensis*.

GEOGRAPHIC DISTRIBUTION. Northern Vietnam (Cao Bang, Vinh Phuc and Lao Cai provinces); occurrence in southern China (Yunnan and/or Guanxi) is also probable.

HABITATS AND HABITS. A mid-montane forest-dweller frequent at 1600–1860 m altitudes, occurring also at lower heights (up to 850 m a.s.l.). — See also the respective section for *S. guanxiensis* and for the group.

COMMENTS. This species was described only based on the female holotype distinctive from similar consubgeners in having the neck smooth (or almost so, as specified in the key alone) [Kischenhofer, 2010], and digital image of the holotype [ibid., Fig. 47] shows the neck very finely rugulose. This character have only been observed in some specimens from the type locality while many others have the neck distinctly rugulose, albeit slightly less so than in the other species of the group.

Stenaptinus obliteratus (Fedorenko, 2013)
Figs 5, 23, 41, 52, 54, 58, 74.

Fedorenko, 2013: 280 (*Pheropsophus*; Chu Yang Sin NP, southern Vietnam).

MATERIAL. Holotype ♂ (ZMMU): 'Vietnam, Dak Lak Prov., Chu Yang Sin Natn. Park, 12°23´48´´N/ 108°20´59´´E, upper flow of Krong Kmar riv., h=1000 m, 30.III–14.IV.2012, D. Fedorenko leg'.

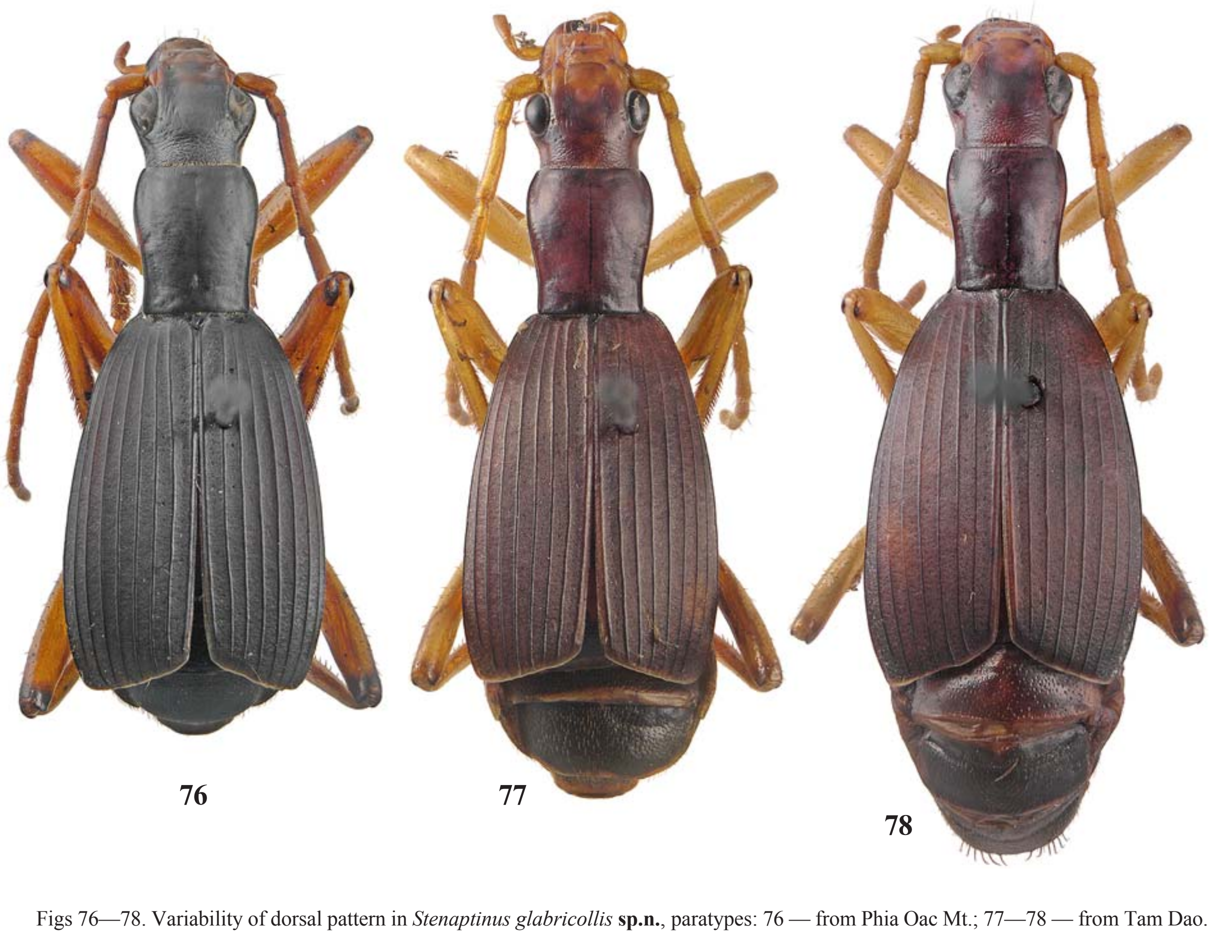
Additional material (SIEE): 3♂♂, ♀, same locality, except for 12°25´25´´N/ 108°21´23´´E, h=970 m, 15–30.V.2014 (D. Fedorenko, N. Poyarkov); 2♂♂, ♀, Kon Tum Province, 14°26´1´´N/ 107°43´14´´E, Chu Mom Ray N.P., 28 km SW of Dak To, Bar Goc Station, h=710 m, 1–10.V.2014 (A. Abramov); 5♂♂, 7♀♀, Gia Lai Province, ~40 km ENE of Pleiku, 14º12´11´´N/ 108º18´54´´E, Kon Ka Kinh Natn. Park, h=890 m, 9–22.V.2016 (D. Fedorenko); 2♀♀, same data, except for ~55 km ENE of Pleiku, 14º18´40´´N/ 108º26´37´´E, Kon Ka Kinh Natn. Park, h=730 m, 8–20.V.2017.

Aedeagus examined in five males.

REDESCRIPTION. Very similar to *S. dissolutus* except as follows: BL 11–14 mm. Body (Fig. 74) robust, dorsally black or brown black. Head pattern very similar, pale colour mostly reduced to imperceptible patch across clypeus and slightly more distinct yellowish cloudy patch on frons at about mid-eye level, the latter patch varying from small spot to larger U- or V-shaped macula. Microsculpture rather coarse. Propleura distinctly punctate and pilose in apical half.

Head: frontal foveae slightly deeper than in *S. dissolutus*, slightly converging on frons, diverging on clypeus and running outside clypeal seta. Labrum convex apically.

Pronotum short, nearly as wide as long, barely wider than head, broadest a third from apex. Base as wide as apex.



Figs 76—78. Variability of dorsal pattern in *Stenaptinus glabricollis* **sp.n.**, paratypes: 76 — from Phia Oac Mt.; 77—78 — from Tam Dao.
Рис. 76—78. Изменчивость окраски верха у *Stenaptinus glabricollis* **sp.n.,** паратипы: 76 — с г. Фиа Оак; 77—78 — из Там Дао.

Sides finely or very finely beaded, slightly sinuate in front of and diverging toward basal angles; these more or less acute, with apices projecting laterobasad or slightly basad, respectively.

Elytra rather short. Ridges fairly wide, ridge 6 reaching base, more seldom interrupted just behind base, ridge 8 entire or barely shortened apically.

Abdomen (Figs 5, 23): tergite VII with a row of 10–16 apical setae in female, more or less densely and rather finely punctate and pilose in basal half; larger punctures becoming slightly coarser and sometimes also sparser toward middle of apical margin; minute punctures extremely sparse, very shallow and thence nearly indistinct.

Profemora in dorsal view slightly tumid in male.

Aedeagus (Figs 54, 58), including internal sac, similar, except that apex of aedeagus median lobe is very distinctive in dorsal view, subquadrate in basal two thirds while triangular and blunt just apically, and distal basal bulb long cylindric (*vs*. short triangular).

Female gonocoxite IX short, wide and nearly straight (Fig. 41). Receptacle similar (Fig. 49).

GEOGRAPHIC DISTRIBUTION. The southernmost species of the group, occurring in central part of the Tay Nguen Plateau (Central Highlands) within Gia Lai and Kon Tum provinces, central Vietnam, as far south as the Dak Lak Plateau (the northern part of the Dalat Plateau). Common in northern parts of the species range, rare in the Dalat Plateau.

HABITATS AND HABITS. The species is more or less frequent in piedmont monsoon broad-leaved forests at 700–1000 m altitudes.

Stenaptinus glabricollis Fedorenko, **sp.n.**
Figs 11, 26, 43, 48, 57, 61, 76–78.

MATERIAL. Holotype ♂ (ZISP) labelled: 'N. Vietnam, Tamdao, 8.6.1995, Gorochov'. Paratypes (ZISP): ♂, same data except 30.V.1995; 2♂♂, 2♀♀, 'Vietnam, Tam Dao, 8–13.IV.1986, Gorokhov' [handwritten in Russian]; ♂, 'VIETNAM, mountains near Tam-Dao, 900 m, 1.7.1962g., Kabakov' [micrograph in Russian]; ♂, with the same label except 9.6.1963g. and label '*Pheropsophus beckeri* Jedl., 10.1965 g. Kabakov det.' [handwritten]. Paratype ♂, 'N-Vietnam, 40 km W of Cao Bang, Phia Oac Mt., 22º36´30´´N/ 105º52´20´´E, h~1600–1650 m, deciduous forest, 3–11.X.2018, leg. D. Fedorenko'.

Genitalia examined in all specimens but two males.

DIAGNOSIS. See the key. In body appearance, including nearly impilose pronotum, the new species is superficially sim-

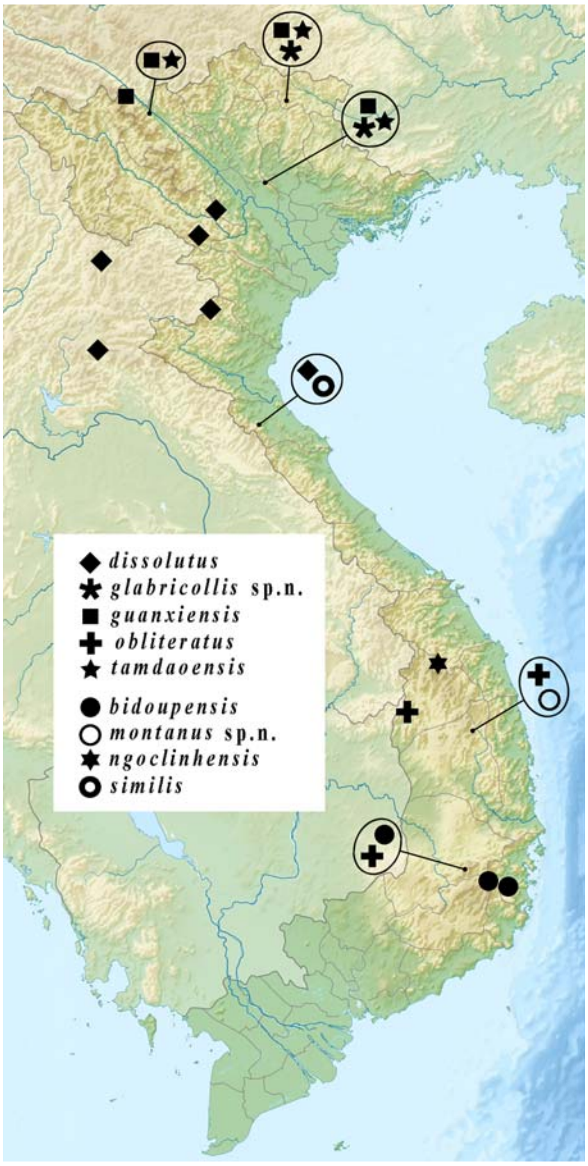


Fig. 79. Disribution pattern map of the species of the *bidoupensis*- and *dissolutus*-group.
Рис. 79. Карта распространения видов групп *bidoupensis* и *dissolutus*.

Table 1. Antennal ratio in the *bidoupensis*-group of *Pheropsopus*.
Таблица 1. Антеннальная формула в группе *bidoupensis* рода *Pheropsopus*.

Species	n	A1/OL	mean	A1/A3	mean	A2/A3	mean	A4/A3	mean
bidoupensis BD	5	0.85–0.93	**0.88**	0.72–0.76	**0.74**	0.41–0.44	**0.42**	0.73–0.79	**0.76**
CYS	5	0.86–0.91	**0.89**	0.74–0.77	**0.75**	0.43–0.47	**0.45**	0.74–0.81	**0.76**
HB	5	0.84–0.93	**0.89**	0.70–0.74	**0.72**	0.40–0.43	**0.42**	0.73–0.77	**0.75**
in toto:	15	0.84–0.93	**0.89**	0.70–0.77	**0.74**	0.40–0.47	**0.43**	0.73–0.81	**0.76**
montanus **sp.n.**	3	0.82–0.88	**0.84**	0.73–0.80	**0.76**	0.42–0.45	**0.43**	0.71–0.73	**0.72**
ngoclinhensis	5	0.86–0.92	**0.89**	0.76–0.80	**0.78**	0.43–0.46	**0.45**	0.70–0.75	**0.73**
similis	1	0.97	**0.97**	0.80	**0.80**	0.43	**0.43**	0.87	**0.87**

Localities: BD — Bi Doup — Nui Ba NP; CYS — Chu Yang Sin NP; HB — Hon Ba Mt.

ilar to three species of the *bidoupensis*-group, *S. scythropus*, *S. andrewesi*, and *S. nepalensis*.

DESCRIPTION. BL 10.4–13.9 mm. Body (Figs 76–78) a little shiny, dorsally brown to black, mostly rather dark brown; head ventrally, legs, antennae, mouthparts, labrum, clypeus and frons anterior to eyes reddish yellow, with pale colour almost reaching mid-eye level medially; femoral apices (mostly apical edges only) slightly to indistinctly infuscated on sides. Sometimes either frons infuscated except laterally or neck reddish. Underside reddish medially, infuscated along sides. Abdominal sternites each dark brown along sides and apically, mostly deep red to reddish-brown in basal two thirds.

Dorsal microsculpture rather coarse, isodiametric over head and pronotum, consisting of slightly longitudinal meshes along elytral ridges and of longer meshes in between. Elytral carinulate sculpture distinct.

Pronotum and notopleura glabrous. Head with a few setigerous punctures behind and very few, if at all, just in front of supraocular seta; genae behind eyes impilose or with 1–2 short setae. Elytral disc with very few short setae far apart here and there. Venter densely pilose, propleura very sparsely to almost indistinctly pilose in apical half.

Otherwise similar to *S. dissolutus*, except as follows:

Head with frontal foveae deep and often parallel in front of eyes, in form of short oblique impressions just behind frontoclypeal suture, less deep on clypeus. Labrum convex apically.

Pronotum broadest 1/3–1/4 from apex. Base barely wider than apex, basal margin barely concave to subconvex, apical margin barely concave. Sides parallel in front of or slightly diverging toward basal angles; these right or slightly acute.

Elytra as for the group. Ridges fine, rather dull, not or slightly wider basally, 6th obliterate in basal 1/6–1/2 (entire in one specimen only).

Abdomen (Figs 11, 26): Tergite VII with moderately dense microscopic punctures between larger, medium-sized and moderately dense to rather sparse, setigerous punctures; with a row of 12–15 apical setae in female. Sternite VII with two apical setae on each side.

Aedeagus (Figs 57, 61): similar except that apex in lateral view is tapered, in dorsal view widely triangular, with margins straight and tip slightly pointed; internal sac with distal basal bulb large, as long as aedeagus apex in dorsal view.

Female gonocoxite IX similar yet more curved laterad (Fig. 43). Receptacle distinctly Y-shaped (Fig. 48).

GEOGRAPHIC DISTRIBUTION. Only known from two localities in northern Vietnam.

Table 2. Body ratios in the *bidoupensis*-group and the *dissolutus*-group of *Pheropsopus*.
Таблица 2. Индексы пропорций тела в видовых группах *bidoupensis* и *dissolutus* рода *Pheropsopus*.

Species	n	PW/HW	mean	PW/PL	mean	PLw/PL	mean	PB/PA	mean	n	EW/PW	mean	EL/EW	mean
bidoupensis BD	5	1.00–1.07	**1.02**	0.93–1.02	**0.97**	0.22–0.29	**0.26**	0.93–0.96	**0.95**		1.92–2.06	**1.98**	1.14–1.28	**1.21**
CYS	5	1.03–1.14	**1.09**	0.89–1.02	**0.94**	0.28–0.35	**0.31**	0.93–0.96	**0.94**		1.91–1.96	**1.94**	1.11–1.30	**1.24**
in toto:	10	1.00–1.14	**1.06**	0.89–1.02	**0.96**	0.22–0.35	**0.29**	0.92–0.97	**0.95**		1.91–2.06	**1.96**	1.11–1.30	**1.23**
montanus **sp.n.**	3	1.09	**1.09**	0.98–1.02	**0.99**	0.29–0.32	**0.30**	1.01–1.04	**1.03**		1.96–2.16	**2.05**	1.11–1.27	**1.17**
ngoclinhensis	5	1.02–1.07	**1.06**	1.00–1.04	**1.02**	0.25–0.28	**0.26**	0.91–1.02	**0.96**		1.84–1.91	**1.88**	1.26–1.32	**1.28**
similis	1	1.09	**1.09**	0.93	**0.93**	0.29	**0.29**	1.0	**1.0**		1.92	**1.92**	1.40	**1.40**
dissolutus XS	6	0.97–1.07	**1.01**	0.86–0.92	**0.90**	0.18–0.31	**0.24**	0.94–1.02	**0.99**		2.00–2.36	**2.18**	1.18–1.39	**1.30**
PH	4	0.95–0.99	**0.97**	0.85–0.91	**0.88**	0.25–0.28	**0.26**	0.97–1.02	**1.00**		2.25–2.36	**2.29**	1.24–1.33	**1.29**
in toto:	10	0.95–1.07	**0.99**	0.85–0.92	**0.89**	0.18–0.28	**0.25**	0.94–1.02	**0.99**		2.00–2.36	**2.23**	1.18–1.39	**1.30**
ssp. *kalyakini*	7	0.96–1.04	**1.00**	0.82–0.88	**0.84**	0.15–0.27	**0.23**	0.97–1.01	**0.98**	1	2.30	**2.30**	1.34	**1.34**
in toto:	17	0.95–1.07	**0.99**	0.82–0.92	**0.87**	0.15–0.31	**0.24**	0.94–1.02	**0.99**		2.00–2.36	**2.23**	1.18–1.39	**1.30**
Sichuan	9	0.95–1.01	**0.97**	0.88–0.96	**0.91**	0.24–0.30	**0.26**	0.97–1.06	**1.00**		2.16–2.39	**2.26**	1.22–1.32	**1.27**
yunnanensis	HT	0.96	**0.96**	0.91	**0.91**	0.20	**0.20**	1.02	**1.02**		2.17	**2.17**	1.24	**1.24**
glabricollis **sp.n.**	7	0.95–1.01	**0.97**	0.85–0.88	**0.87**	0.24–0.32	**0.28**	0.95–1.08	**1.03**		2.12–2.31	**2.15**	1.20–1.35	**1.31**
guanxiensis SP	5	0.94–1.01	**0.98**	0.84–0.92	**0.87**	0.22–0.28	**0.25**	0.98–1.04	**1.01**	2	2.09–2.15	**2.12**	1.35–1.36	**1.36**
BX	5	0.96–0.99	**0.98**	0.80–0.91	**0.86**	0.25–0.28	**0.27**	0.93–0.97	**0.95**		2.01–2.18	**2.10**	1.23–1.33	**1.30**
PO	5	0.92–0.97	**0.94**	0.86–0.89	**0.88**	0.21–0.27	**0.25**	0.92–1.00	**0.95**		2.07–2.17	**2.13**	1.18–1.33	**1.28**
in toto:	15	0.92–1.01	**0.97**	0.80–0.92	**0.87**	0.21–0.28	**0.26**	0.92–1.04	**0.97**	12	2.01–2.18	**2.11**	1.18–1.33	**1.30**
tamdaoensis TD	7	0.95–1.02	**0.99**	0.85–0.93	**0.90**	0.21–0.28	**0.24**	0.95–1.03	**0.99**	5	2.06–2.16	**2.12**	1.25–1.35	**1.31**
PO	7	0.95–1.04	**0.99**	0.85–0.95	**0.92**	0.25–0.30	**0.27**	0.96–1.01	**0.99**		1.91–2.28	**2.07**	1.22–1.39	**1.30**
SP	2	0.94–0.98	**0.96**	0.87–0.89	**0.88**	0.27–0.31	**0.29**	0.95–1.00	**0.98**		2.02–2.11	**2.07**	1.37–1.38	**1.38**
in toto:	16	0.94–1.04	**0.97**	0.85–0.95	**0.91**	0.21–0.31	**0.26**	0.95–1.03	**0.99**	14	1.91–2.28	**2.09**	1.22–1.39	**1.31**
obliteratus	7	1.02–1.08	**1.05**	0.93–0.98	**0.96**	0.29–0.34	**0.33**	0.96–1.06	**1.02**		1.85–2.24	**2.03**	1.12–1.29	**1.21**

Localities: BD — Bi Doup–Nui Ba NP; BX — Bat Xat NP; CYS — Chu Yang Sin NP; PH — Pu Hoat NP; PO — Phia Oac NP; TD — Tam Dao; SP — Sa Pa; XS — Xuan Son NP.

NAME. Refers to the glabrous pronotum as one of the distinctive features.

HABITATS AND HABITS. The data labels show occurrence of the species at 900–1600 m altitudes in highlands. The fact that the only specimens has been taken at 1600 m altitude on the Phia Oac Mt., whereas *S. tamdaoensis* was very common there, may suggest that *S. glabricollis* **sp.n.** prefers living at lower heights.

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